

**ABSTRACT**

Doping copper interconnects (100) with silicon (115) has been shown to improve Electromigration and Via Stress Migration reliability. After copper (118) is deposited by electrochemical deposition and chemically-mechanically polished back, doping is achieved by flowing  $\text{SiH}_4$  over the copper interconnect (100) for 0.5 to 5 seconds at a temperature of 325-425°C.